

## CLAIMS

### We Claim

1. A method for projecting an image onto a projection screen without said image being projected onto a presenter moving about in front of said screen, and without said presenter casting a shadow, said method comprised of the following steps,
  - a) generating a left and right correction of an image simultaneously projected onto said screen from each of two positions that are off-axis on opposite sides of the centerline of said screen and where both projections of said image register on said screen as a single image,
  - b) generating a center of mass of said presenter's silhouette,
  - c) locating a vertical join line on said screen directly behind said presenters center of mass,
  - d) inhibiting that portion of the projected image from the left projector that extends to the right of said join-line,
  - e) inhibiting that portion of the projected image from the right projector that extends to the left of said join-line thereby providing the full projected image on the screen from the left and right image segments, without either segment projecting said image onto said presenter, and without casting said presenter's shadow onto the screen.
2. The method of claim 1 wherein said correction is rectilinear.
3. The method of claim 1 in which said presenter is spaced away from said screen by at least 18 inches.
4. The method of claim 1 in which said projectors are disposed above a viewing audience and beyond the left and right edges of said projection screen.
5. The method of claim 1 in which said center of mass of said presenter is the average of two centers of mass determined from two infrared images of the presenter obtained by an infrared illuminator and camera in proximity to each of said two image projectors.

6. The method of claim 1 in which said center of mass is obtained from a single infrared silhouette obtained from an infrared camera located on screen center.
7. The method of claim 1 in which said center of mass is determined by a range finder located at one of the left and right edge of said projection screen.
8. The method of claim 7 in which a range finder is located at both the left and right edges of said screen to improve the accuracy of locating said presenter's center of mass.
9. The method of claim 1 in which a silhouette of said presenter is obtained from infrared cameras at both left and right projection positions and all pixels in said silhouettes are continuously inhibited to prevent projection onto a part of said presenter extending into a projection beam.
10. The method of claim 9 in which all pixels inhibited in said silhouettes are assigned RGB levels to supplement the illumination on a presenter in a dimly lighted auditorium.
11. The method of claim 10 in which said assigned RGB levels represent one of white light and colored light.
12. The method of claim 2 in which said projectors are off-axis from said screen to the left and right of said screen center and are off-axis vertically from said screen center.
13. The method of claim 12 in which said rectilinear correction is applied to both projected images in both the horizontal and vertical axes.
14. The method of claim 1 in which both the right and left segments of said projected image overlap the join line as a dissolve thereby making said joining of the two image segments less visible.

15. The method of claim 2 in which a luminance correction is made to each of the rectilinear corrected images to compensate for the luminance difference generated by said rectilinear correction and in off-axis projection distance between the near and far side of the projection screen, and in projector optics.

16. The method of claim 15 in which said luminance correction is made to the rectilinear corrected image before said image is projected, and where said luminance correction is the inverse of the RGB variance of the projectors on-screen luminance distribution pattern when projecting a white field.

17. The method of claim 16 in which said luminance correction is a full field correction made independently for each projector.